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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/964,690 | 09/28/2001 | Li-Lien Lee | 146712002600 | 2930 |

25227 7590 08/28/2003

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EXAMINER

RICKMAN, HOLLY C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1773

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application N . | | Applicant(s) | |
| | 09/964,690 | | LEE ET AL. | |
| | Examiner | | Art Unit | |
| | Holly Rickman | | 1773 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 6 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1-5, 7-9, 11-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6174582).

Bian et al. disclose a magnetic recording medium having a seedlayer formed from Nb and containing nitrogen. The reference teaches that the seedlayer is sputtered in an atmosphere containing N and may have a N concentration of 10-50 at % (col. 4, lines 57-60; col. 5, lines 22-49). Bian et al. teach that the thickness of the seedlayer is not believed to be critical and a range of 5-30 nm is given as guidance. Thus, the reference fails to disclose an embodiment of the invention having a seedlayer 1-40 Å in thickness. However, it is noted that the reference does state that the “thicknesses of the layers are not believed to be critical for practicing the invention, but the following ranges are given as guidance. The seed layer is preferably from about 5 to 30 nm thick.” See column 4, lines 57-60. Thus, values of “*about*” 5 nm or 50 Å are within the scope of the invention. It is the Examiner’s contention that the claimed range of about 1 to *about* 40 Å overlaps the claimed end point of “about 5 nm.”

In any case, it would have been obvious to one of ordinary skill in the art at the time of invention to use the thinnest seedlayer possible in order to reduce costs associated with producing the recording medium. Since the reference clearly states that the thickness of the seedlayer is not critical, it would have been well within the purview of one of ordinary skill in the art at the time of invention to determine what this thickness would be.

Art Unit: 1773

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bian et al. (US 6174582) in view of Futamoto et al. (US 6607849).

Bian et al. disclose all of the limitations of the claims except for the claimed coercivity values. The reference does teach that the coercivity is greater than 2000 Oe (see col. 7, claim 9).

Futamoto et al. teach that it is known in the art to increase coercivity by decreasing the product of Br and thickness of the magnetic film in order to "reduce the effect of the demagnetizing field at the magnetic recording process." See column 1, lines 29-33.

It would have been obvious to one of ordinary skill in the art at the time of invention to increase the coercivity of the medium taught by Bian et al. in order to achieve the associated benefit taught by Futamoto et al.

Allowable Subject Matter

3. Claims 6 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Bian et al. fail to teach or suggest a magnetic recording medium having a coercivity within the ranges set forth in claim 10. Furthermore, the reference fails to teach or suggest a motivation to optimize the niobium:metal ratio in the seedlayer.

Response to Arguments

4. Applicant's arguments filed 6/4/03 have been fully considered but they are not persuasive with respect to the rejection of the claims in view of Bian et al.

Applicant argues that the copy of the Acceptance Test Procedure for the MDP-250B sputtering machine establishes that the disclosure of “about 5 nm” by Bian et al. means a minimum of 47 Å and the claim limitation directed to “about 40 Å” means 43 Å at the most. Thus, Applicant argues the two disclosures do not overlap.

Applicant’s argument is not persuasive for several reasons. Applicant’s argument is based on a standard for a Cr layer not a N-containing Nb layer as claimed. Thus, this showing is not applicable to the presently claimed film. Even if the standard was for a layer having the claimed composition, all that it shows is the expected thickness uniformity in using that particular machine to deposit the claimed layer. It does not establish the plain meaning of “about.” The Examiner maintains the position that in view of Bian’s teaching of a preferred thickness range of about 5 nm or more and the explicit disclosure that the thickness of the seedlayer is not critical, one of ordinary skill in the art would have reasonably expected “about” 50 Å to overlap with about 40 Å. Finally, Applicant’s arguments do not address the Examiner’s position that it would have been obvious to use a seedlayer having as small a thickness as possible in order to minimize production costs.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (703) 305-2642. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the

Application/Control Number: 09/964,690

Page 5

Art Unit: 1773

organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Holly Rickman".

Holly Rickman
Primary Examiner
Art Unit 1773

hcr
August 20, 2003